REMARKS

Reconsideration of this application as amended is respectfully requested.

Claims 16-26 are pending in this application.

Original claims 1-15 have been deleted, new independent claims 16, 20 and 25 have been added and new dependent claims 17-19, 21-24 and 26 have been added.

No new matter has been added by any of the above mentioned amendments.

More in detail new independent claim 16 is a combination of original claims 1, 4, 5 and 11.

New dependent claims 17, 18 and 19 comprise a composition exactly as disclosed in example 1, 2 and 3 at pages 10, 11 and 12 of the present specification.

New independent claim 20 is a combination of original claims 1, 4, 5 and 6.

New dependent claim 21 derives from original claim 8.

New dependent claim 22 derives from original claim 11.

New dependent claim 23 derives from original claim 9.

New dependent claim 24 derives from original claim 12.

As per new independent claim 25, please note that it is a combination of original claims 1, 4, 5 and 13.

New dependent claim 26 derives from original claim 11.

The new set of claims has been checked in order to avoid indefinite terms such as "preferably" and in order to introduce consistent limitations.

CLAIM REJECTIONS - 35 USC 102/35 USC 103.

Claims 1-15 were rejected under 35 USC 102 (b) and (e) as being clearly anticipated by De Meringo et al. (US Patent 5952254) and by Furtak (French Patent 2781788).

Moreover claims 1-15 were rejected under 35 USC 103 (a) as being unpatentable over Bauer et al.(US Patent 5401693).

In view of the above rejections, a new set of claims has been drafted so as to put into evidence novelty and inventive step of the present composition.

New independent claim 16 has been drafted so as to clearly limit the broad ranges before claimed in original claim 1.

Indeed Al_2O_3 range has been clearly limited from 1.1 to 1.8 in percent by weight; Na_2O range has been limited from 17.5 to 18.5 and moreover K_2O range has been limited from 0.6 to 1.

Moreover it has been clearly specified that the biologically-degradable glass fiber composition must comprise an amount of SO_3 included between 0.1 to 0.5 in percent by weight.

First of all it is to be noted that no one of the prior art cited discloses the use of a composition comprising a percent by weight of SO_3 included between 0.1 to 0.5.

No mention about SO_3 is made by document FR 2781788 (Furtak) and by document US 5401693 (Bauer) throughout the whole description and claims.

Also Porter (US 5055428), or Carbol (US 4312952) does not mention the use of SO_3 in a whichever general glass fiber composition.

The only prior art at least mentioning SO_3 is De Meringo (US 5952254) at column 8, lines 60-65.

Anyway De Meringo says "When the sum of all the contents of all the compounds is likely lower than 100%, it should be understood that the residual proportion corresponds to the impurities and/or minor components which are not analyzed (for example traces of Fe_2O_3, of PiO_2, of SO_3, ect.").

In other words SO_3 may be an impurity of De Meringo composition and it is therefore recognized not to have any important effect on the glass fiber composition.

It is to be noted that De Meringo presents 51 compositions disclosed at columns 9, 10, 11 and 12 of the description and no one mentions the presence of SO_3,

Please note that for example composition "EX 1A" at column 9 discloses the presence of NiO in percent by weight of 0,01 and also the presence of B_2O_5 in a percent by weight equal to 0.05, but no mention to SO_3 is made.

Again it is felt that the use of SO_3 in a biologically-degradable glass fiber composition is not known nor disclosed in particular in its effects by any of the prior art documents on the record.

By contrast the Applicant has discovered that the use of sulfur trioxide in percentage by weight included between 0.1 and 0.5 affected the composition behavior by improving the biological degradability of the glass without substantially varying its resistance to H_20 (see in particular page 7 line 30-36 of the present application).

It is clear that a biologically-degradable glass fiber composition can reduce the cancerogenous effects of the glass fibers increasing the capability of the human body to get rid of the possibly-absorbed fibers.

On the other hand, the glass fiber compositions must at all events also have an appropriate behavior with respect to its physical properties.

In particular a greatly felt need is to obtain a good biological degradability combined with the good resistance to water and humidity which is a pre-requisite while using the glass fibers.

Obviously it is really hard to reconcile a good resistant to water with a good biological degradability since it is really difficult to obtain fibers having a good tendency to dissolve in biological media (made mainly of water) at the same time having a good resistance to water and humidity.

The Applicant has discovered that the use of SO_3 in a biologically-degradable glass fiber can help in solving the above mentioned problem therefore permitting to obtain an unexpected result: good biodegradability and good resistance to water/humidity.

Please again note that no one of the prior art teaches the use of SO_3 in a glass fiber composition in order to improve resistance to water and humidity without pouring the biosolubility.

In view of the above it is felt that new independent claim 16 should be considered now new and inventive too over the prior art and in particular over De Meringo, Furtak and Bauer.

Dependent claims 17, 18 and 19 simply present some specific composition which the Applicant discovered to have the best biosoluble and humidity resistance properties as clearly stated at pages 10, 11 and 12 of the present application.

Also new independent claim 20 is felt to be new and inventive over the prior art cited by the US Patent Office.

Indeed such a claim has been amended in order to introduce very strict ranges in particular of Al_2O_3 which was limited in percent by weight from 1.1 to 1.25; moreover Na_2O was limited from 17.5 to 18.5, K_2O was limited from 0.6 to 1 and $B_2O_3 + P_2O_5$ was limited to be higher than 5.

First of all it is to be noted that no one of the 51 specific examples of De Meringo falls within the claimed range disclosed by the applicant in the present claim 20.

More in detail no one of the 51 De Meringo specific compositions discloses the presence of Al_2O_3 in a value falling between 1.1-1.25 as now claimed.

It is clear (see also the present specification page 4, lines 14-28) that alumina is one of the most important parameter to be measured in order to obtain a biological degradability control combined with a resistance with respect to water and humidity.

Please also note that with respect to the range of K_2O now claimed only one of 51 compositions presents a value falling within the range included between 0.6 and 1 now claimed (see example 11c at column 11 of De Meringo).

Anyway such a composition 11c discloses a completely different value for SiO_2, B_2O_3, CaO, MgO and Na_2O.

In other words it is a completely different specific composition with respect to the claimed ranges.

In other words De Meringo is a prior art which teaches a broad range within, overlapping, or tauching the claimed range, but no specific examples falling within the claimed range are disclosed.

Indeed, De Meringo discloses different general glass of compositions including the standard constituent of glass compositions (see in particular De Meringo, column 5, lines 12-14) using very broad ranges for each component.

In other words, substantially all industrial glass fiber compositions ranges overlap, tauch or fall within De Meringo general glass compositions.

Again De Meringo compositions A, B and C are clearly broad ranges.

Moreover, as above stated, no one of the specific examples in the prior art is within the claimed range and therefore a case by case determination must be made as to anticipation.

It is the applicant's opinion that De Meringo does not disclose the subject matter with sufficient specificity so as to constitute an anticipation under the statute.

More specifically, an optimal biological degradability was obtained with a great reduction in the amount by weight of Al_2O_3 together with an increase in the combination of $B_2O_3 + B_2O_5$ which also compensate the increase in the alkaline oxides that reduce the structural resistance and increased the glass brittleness respectively.

As clearly stated by the Applicant at page 8, lines 26-36, the B_2O_3 component acts on the fiber elasticity, improves biosolubility and does not reduce the capability of the glass to be formed into fibers too much.

B_2O_5 action consists in efficiently increasing the structural features and biosolubility.

In other words again the combination of a very small amount of Al_2O_3 with the high percentage of $B_2O_3 + P_2O_5$ has allowed to obtain a good biosoluble fiber having any way good mechanical properties.

It is again to be noted that no one of the prior art on the record teaches the use, in combination, of Al_2O_3 between 1.1 and 1. 25 together with $B_2O_3 + B_2O_5$ higher than 5.

It is again to be noted that De Meringo does not even present a single composition having Al_2O_3 between 1.1 and 1.25.

Considering now new independent claim 25, it is again to be noted that no one specific example in the prior art is within the claimed range so as to anticipate the range.

Again no one of the 51 specific examples of De Meringo presents an alluminium oxide value included in the range now claimed.

Again it is the applicant's opinion that the earlier references do not disclose the claimed subject matter with sufficient specificity to constitute an anticipation under the statute.

In particular by looking at the Applicant's page 9, lines 23-35 it is clear that a high concentration by weight of alumina (between 1.6 to 1.8) appears to be bio-soluble since magnesium oxide helps in increasing solubility and also insures a better behaviour than calcium oxide when the fiber forming operations are carried out.

It is clear that the combination of magnesium oxide higer than 3, 5, calcium oxide between 6 to 9 and alluminium oxide between 1.6 to 1.8 allows to increase of alumina without substantially varying the biosolubility properties.

Moreover the claimed range presents a high percentage weight of magnesium oxide and boron oxide since one improves bio-sensitivity and the fiber-forming operations and the other improves elasticity and biosolubility.

The above teachings and ranges are not shown or disclosed by any of the prior art documents.

In view of the above amendments and arguments it is felt that also claim 25 should be considered new and inventive too.

On the basis of the above amendments and remarks, reconsideration and allowance of the present application is respectfully solicited.

If there are any further fees resulting from this communication, please charge said fees to Deposit Account No. 16-0820, Order No. 35763.

Respectfully submitted,

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Date: 6-13-03